Ministry of Northern Development and Mines

Ontario

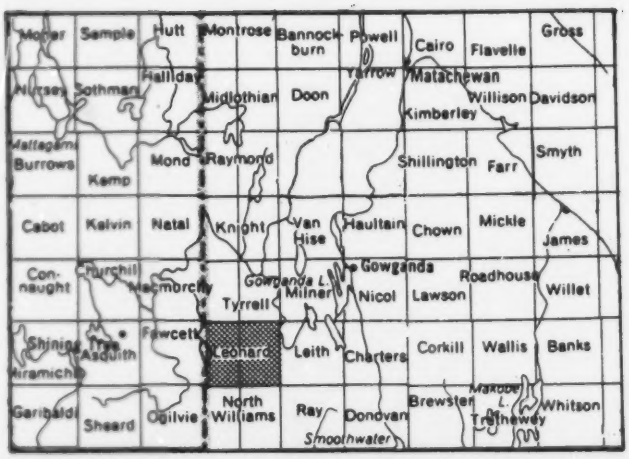
Mines and Minerals Division

ONTARIO GEOLOGICAL SURVEY

GEOLOGICAL DATA INVENTORY FOLIO 505

LEONARD TOWNSHIP

Compiled by the Staff of
the Resident Geologist's Office
Cobalt



LOCATION MAP Scale: 1:1 013 760 or 1 inch to 16 miles

CANADA ONTARIO Mineral Development Agreement Exploration Minerals

This project is part of the five year Canada–Ontario 1985 Mineral Development Agreement (COMDA), a subsidiary agreement to the Economic and Regional Development Agreement (ERDA) signed by the governments of Canada and Ontario.

90-05984/ NTS Number 41P/6,7,10,11

Mining Claim Map Number M.232

This project was funded under the Canada-Ontario Mineral Development (COMDA).

STATEMENT: This inventory is unedited. Discrepancies may occur for which the Ontario Geological Survey does not assume liability. Information from this source may be quoted if credit is given. Reference to this inventory should be made as follows:

Ontario Geological Survey 1990. Leonard Township, Geological Data Inventory Folio 505; compiled by the staff of the Resident Geologist's office, Cobalt.

Original Compilation by: Patricia Anderson, February 15, 1989

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Date	Page Revised	Revised by

Leonard Township

CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

If the reader wishes to convert imperial units to SI (metric) units or SI units to imperial units the following multipliers should be used:

CONVERSION FROM SI TO IMPERIAL			CONVERSION FROM IMPERIAL TO SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.308 0	cubic yards	1 cubic yard	0.764 555	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

1 ounce (troy)/ton (short)	20.0	pennyweights/ton (short)
1 pennyweight/ton (short)	0.05	ounce (troy)/ton (short)

One gram(g) per tonne is equivalent to one part per million (1 ppm).

NOTE–Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries published by The Mining Association of Canada in co-operation with the Coal Association of Canada.

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ACCOMPANYING MAPS

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Map Scale 1: 31 680 or 1 inch to ½ mile

DATA SOURCES CHECK LIST

NOTE: The following sources have been searched to compile the data for this area. If no reference data was found the appropriate box is marked 'no'; if reference data was found, the box is marked 'yes'.

All reference data found are included in the following pages. If the box is blank, the data source has not yet been searched. If the box is marked N.A., the source item is Not Applicable to this area and therefore not searched.

	SOURCES OF DATA	Data	Initial
1	Resident Geologist's Office Files	Yes	D.P.A.
2	Assessment Files Research Office, Toronto	Yes	D.P.A.
3	ODM General Index; 9 Volumes	Yes	D.P.A.
4	Catalogue of Airborne Geophysical Surveys (ODM)	No	D.P.A.
5	ODM Mineral Resources Circulars and OGS Mineral Deposits Circulars	Yes	D.P.A.
6	ODM Industrial Mineral Reports	No	D.P.A.
7	Bibliography of Post Precambrian Theses - Karrow (ODM MP 1)	No	D.P.A.
8	Bibliography of Precambrian Theses - Ginn (ODM MP 2)	No	D.P.A.
9	Newspaper Clippings File	Yes	D.P.A.
10	GSC Index to Publications	Yes	D.P.A.
11	OGS Index to Published Maps and Reports - MP 77 and Supplements to MP 77	Yes	D.P.A.
12	OGS Index Maps	Yes	D.P.A.
13	Source Mineral Deposit Records (O.G.S.)	Yes	D.P.A.
14	Author - Subject Articles File	Yes	D.P.A.
15	Miscellaneous Papers: ODM & OGS	Yes	D.P.A.
16	ODM Geological Circulars: OGS Study Series	Yes	D.P.A.
17	ODM Preliminary Reports: ODM Bulletins	Yes	D.P.A.
18	ODM – OGS Open File Reports	Yes	D.P.A.
19	OGS Northern Ontario Engineering Geology Terrain Studies	Yes	D.P.A.
20	OGS Aggregate Resources Inventory Papers	N.A.	D.P.A.
21	OGS Mineral Potential Maps	Yes	D.P.A.
22	Theses on File, Cobalt	No	D.P.A.
23	Aerial Photographs on File, Cobalt	Yes	D.P.A.

METALS AND MINERALS REFERENCES LIST

△ anh. . . . . .Anhydrite
△ ank. . . . . .Ankerite
△ anna . . . . . Annabergite
△ ap. . . . . .Apatite
▲ arg . . . . . Argentite
△ As . . . . . .Arsenic
△ asp . . . . . .Arsenopyrite
△ asb . . . . . .Asbestos
△ ba. . . . . .Barite
△ be. . . . . .Beryl
▲ Bi. . . . . .Bismuth
△ bn . . . . . .Bornite
△ bran . . . . . .Brannerite
△ bruc . . . . . .Brucite
△ Cd . . . . . Cadmium
△ calc. . . . . Calcite
△ carb . . . . . .Carbonate
△ cel . . . . . .Celestite
△ cc. . . . . .Chalcocite
▲ cp. . . . . .Chalcopyrite
▲ ch. . . . . .Chert
△ clay . . . . . .Clay
▲ Co . . . . . Cobalt
△ cob. . . . . Cobaltite
△ cb. . . . . .Columbite
▲ Cu . . . . . .Copper
△ cor . . . . . Corundum
△ dol . . . . . Dolomite
△ ep. . . . . Epidote
▲ ery . . . . . Erythrite
△ fel . . . . . .Feldspar
△ fl . . . . . .Fluorite (flurospar)
△ fu. . . . . .Fuchsite
▲ gn. . . . . .Galena
△ gt. . . . . .Garnet
△ goe . . . . . .Goethite
▲ Au . . . . . Gold
△ gf. . . . . .Graphite
△ gl . . . . . Gravel
△ gyp. . . . . .Gypsum
▲ hem . . . . . Hematite
△ il . . . . . .Ilmenite
△ Fe . . . . . .Iron
▲ IF. . . . . Iron Formation
▲ jas . . . . . Jasper
△ kaol . . . . . .Kaolinite (kaolin)
△ ky . . . . . Kyanite
▲ Pb . . . . . Lead
△ lim . . . . . Limonite
△ Li. . . . . Lithium
△ mgst . . . . . .Magnesite
▲ mag . . . . . .Magnetite
▲ mc . . . . . Malachite
△ Mn . . . . . Manganese
△ mb . . . . . .Marble
△ mar. . . . . Marcasite
△ ma . . . . . .Marl
△ mi . . . . . Mica
△ ml . . . . . .Millerite
△ mo . . . . . Molybdenite
△ Mo . . . . . .Molybdenum
△ mon . . . . . Monazite
△ ne. . . . . Nephelite (nepheline)
▲ nc. . . . . .Niccolite
▲ Ni. . . . . Nickel
△ Nb . . . . . .Niobium
△ Pd . . . . . .Palladium
△ peat . . . . . .Peat
△ pent . . . . . .Pentlandite
△ Pt. . . . . .Platinum
▲ py . . . . . .Pyrite
△ pyl . . . . . Pyrochlore
△ pyrl . . . . . .Pyrolusite
▲ po . . . . . .Pyrrhotite
△ q . . . . . Quartz
△ qcv . . . . .Quartz carbonate vein
△ ra. . . . . .Radioactive minerals
△ RE . . . . . .Rare Earths
△ sd. . . . . Sand
△ sgl . . . . . Sand and gravel
△ ss . . . . . .Sandstone
△ scap . . . . . Scapolite
△ shee . . . . . .Scheelite
▲ serp . . . . . Serpentine
△ sh. . . . . Shale
▲ sid . . . . . Siderite
△ si . . . . . Silica
▲ Ag . . . . . .Silver
△ sl . . . . . Slate
▲ sm . . . . . .Smaltite
△ sod . . . . . Sodalite
▲ spec . . . . . Specularite
▲ sp. . . . . .Sphalerite
△ spd . . . . . .Spodumene
△ staur . . . . . .Staurolite
△ stib. . . . . Stibnite
△ st . . . . . .Stone
△ talc. . . . . .Talc
△ Te . . . . . .Tellurium
△ td. . . . . Tetrahedrite
△ th. . . . . .Thorite
△ Th . . . . . .Thorium
△ thuc . . . . . Thucholite
△ ti . . . . . Titanite
△ Ti. . . . . Titanium
△ tour . . . . . .Tourmaline
△ trap . . . . . .Trap rock
△ W. . . . . Tungsten
△ uran . . . . . Uraninite
△ U . . . . . .Uranium
△ verm . . . . . .Vermiculite
△ Y . . . . . Yttrium
▲ Zn . . . . . .Zinc
△ zr. . . . . Zircon

Solid triangles indicate metal and mineral occurrences shown on the accompanying maps or listed in Drillhole Summary.

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
A.	Steep-Thompson Prospect (Silver Pack Mines)	Ag, Co, Cu, Ni		MRC 10, p. 416	ODM 1927, Vol. 36, pt. 2, p. 98 ODM 1927, Map 36c ODM 1962, Map P.151
B.	Nellie Lake Syndicate (Silver Pack)	Ag, Co, Ni, Bi sm, nc, cp		MRC 10, p. 416	ODM 1927, Vol. 36, pt. 2, p. 97 ODM 1927, Map 36c ODM 1962, Map P.151
C.	Caswell-Eplett Prospect	Ag, Co, Ni nc		MRC 10, p. 415	ODM 1927, Vol. 36, pt. 2, p. 96 ODM 1927, Map 36c ODM 1962, Map P.151
D.	Neelands Prospect	Ag, Co, Cu, Ni nc		MRC 10, p. 416	ODM 1927, Vol. 36, pt. 2, p. 97 ODM 1927, Map 36c ODM 1962, Map P.151 Leonard Tp. AF, Neelands, E.W.

GDIF FORM NO. 1

MINERAL OCCURRENCES			Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS industrial Mineral Reports	Additional References and/or Remarks
Map Ref. Letter	Name(s)	Mineralization			
E.	Greave Prospect	Ag, Co, Cu, Zn		MRC 10, p. 415	ODM 1927, Vol. 36, pt. 2, p. 96 ODM 1927, Map 36c ODM 1962, Map P.151
F.	Archibald-Pope Prospect	Ag, Co, Cu, Pb sm, cp, gn		MRC 10, p. 415	ODM 1927, Vol. 36, pt. 2, p. 97 ODM 1927, Map 36c ODM 1962, Map P.151 Leonard Tp. AF, United Reef Petroleums Ltd.
G.	Saville	Ag, Co, Cu, Ni		MRC 10, p. 416	3 locations in Data Exploration map mark areas of old trenching ODM 1927, Vol. 36, pt. 2, p. 95 ODM 1927, Map 36c ODM 1962, Map P.151 Leonard Tp. AF, United Reef Petroleums Ltd.

GDIF FORM NO. 1

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
H.	Leonard Silver (Turnbull)	Co		MRC 10, p. 415	ODM 1927, Vol. 36, pt. 2, p. 96 ODM 1927, Map 36c ODM 1962, Map P.151
I.	Walker Silver (Paymaster)	Co, Cu, Ni cp, py		MRC 10, p. 416	ODM 1927, AR 36, pt. 2, p. 97 ODM 1927, Map 36c ODM 1962, Map P.151
J.	Fournier Lake Occurrence (McVittie, J.P. and Bennett, W.S.)	IF (ch, jas, mag) - major sid, hem - minor		MRC 11, pp. 469-470 MDIR T 0296	ODM 1927, AR 36, pt. 2, pp. 94-95 ODM 1927, Map 36c ODM 1923, I.O.C. Rpt., pp. 211-212 GSC 1917, Mem. 95, pp.124-125 OGS 1977, GR 146, pp. 38-39

GDIF FORM NO. 1

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
K.	Shining Tree Lake Occurrence	IF (jas, ch, mag) - major py - minor		MRC 11, p. 478	2 miles long from Tyrrell Tp. into Macmurchy and Leonard Tps. ODM 1923, I.O.C. Rpt., pp. 205, 211 ODM 1932, AR 41, pt. 2, p. 36 and map 41b ODM 1927, Map 36c GSC 1917, Mem. 95, p. 124
L.	Sullivan, M.J.	Ag - major Co, py, cp, gn		MDIR T 0297	OGS 1977, GR 146, p. 46 OGS 1976, Map 2359 Leonard Tp. AF, Sullivan, Martin
M.	Coulee Lead & Zinc	Co			2 locations on Exploration Data map centred on company trenches OGS 1977, GR 146, pp. 41-42 OGS 1976, Map 2359 OGS 1973, Map P.820 Leonard Tp. AF, Coulee Lead & Zinc Mines Ltd.

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
N.	Exploration Projects	Ni, cp, py, nc, sm			4 locations on Exploration Data map centred on company drillholes Leonard Tp. AF, Exploration Projects OGS 1976, Map 2359 OGS 1973, Map P.820 OGS 1977, GR 146, pp. 42-43
O.	McGill	Co			OGS 1976, Map 2359 OGS 1973, Map P.820 Leonard Tp. AF, McGill, Kenneth
P.	Decker	IF, py			2 locations on Exploration Data map centred on company trenches OGS 1977, GR 146, p. 42 OGS 1976, Map 2359 OGS 1973, Map P.820 Leonard Tp. AF, Decker, Albert

GDIF FORM NO. 1

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
Q.	Silver Pack	Pb, cp, py, sp Co, po			3 locations on Exploration Data map centred on company drillholes OGS 1976, Map 2359 OGS 1973, Map P.820 OGS 1977, GR 146, pp. 45-46 Leonard Tp. AF, Silver Pack Mines Ltd.
R.	Exploration Syndicate of Ontario	Co			OGS 1976, Map 2359 OGS 1973, Map P.820 ODM 1927, AR 36, pt. 2, p. 98
S.	Newnorth	Co, Ni, Ag cp, py			20 occurrences on Exploration Data map centering on trenching OGS 1976, Map 2359 OGS 1973, Map P.820
T.	Shining Tree Lake	cp, mc			OGS 1976, Map 2359 OGS 1973, Map P.820

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
U.	East Fournier Lake area	cp, mc			2 occurrences on Exploration Data map OGS 1976, Map 2359 OGS 1973, Map P.820
V.	West Fournier Lake area	py			2 occurrences on Exploration Data map OGS 1976, Map 2359 OGS 1973, Map P.820
W.	Southern Taylor Lake	Co			OGS 1976, Map 2359 OGS 1973, Map P.820
X.	North Spider Lake	IF, cp, py			3 occurrences on Exploration Data map OGS 1976, Map 2359 OGS 1973, Map P.820
Y.	Forest Access Road south of Wapus Creek	cp, mc			OGS 1976, Map 2359 OGS 1973 Map P.280
Z.	Grand Lake	cp			OGS 1976, Map 2359 OGS 1973, Map P.280

GDIF FORM NO. 1

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT COMPANY/AUTHOR (file number)		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
1	Alamo Petroleum Ltd., AFRO #2.2025	76	76					76					76							
2	Coulee Lead & Zinc Mines Ltd.	63		63				72												
3	Decker, Albert							71												
4	Exploration Projects, 1958, Leonard & Tyrrell Tps.	59			59	59														
5	McGill, Kenneth E.			76 75 74 73 72				76 75 74 73 72												
6	Neelands, E.W.			pre 27																

GDIF FORM NO. 2

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT COMPANY/AUTHOR (file number)		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
7	Newworth Gold Mines Ltd.				57								56							
8	Paymaster Consolidated Mines Ltd.				59	59		62												
9	Silver Pack Mines Ltd. AFRO #63A.454	65		65	65	65		65												
10	Sullivan, Martin J. (United Reef Petroleums Ltd.)				71	71														
11	United Reef Petroleums Ltd., AFRO #2.1624, 2.1393	74	73		75	75		75 74 73												
12	Waddington, G.E. AFRO #2.1810, 2.1537	75						75 74				74								

GDIF FORM NO. 2

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
COMPANY/AUTHOR (file number)																				
13	Silver Dollar Mines Ltd. Tyrrell & Leonard Tps.	47																		
14	Walker Silver Mines Ltd. (formerly McIntosh Mines Ltd.)			pre 27			pre 27													
15	Nellie Lake Syndicate			26			26													
16	Caswell-Eplett			pre 27			pre 27													
17	Greave, E.L.			pre 27																
18	Saville Exploration Syndicate, 1909			09-?																
	Currie, W.F.			pre 27																

GDIF FORM NO. 2

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
COMPANY/AUTHOR (file number)																				
19	Archibald			pre 26																
	under option to a Toronto syndicate, 1926						26													
20	Turnbull			pre 27																
21	Hedlund, L.O.			pre 27																
22	Exploration Syndicate of Ontario			pre 27																

GDIF FORM NO. 2

DRILLHOLE SUMMARY

Map Drilling Location Number	Company Name	Company Drillhole Number	Date Drilled	Bearing Azimuth DEGREES	Initial Dip of Hole DEGREES	Thickness of Overburden FEET	Total Length of Hole FEET	Mineralization Noted in Log	Assay Data Included for
1	Exploration Projects	1	1959	West	-45	10	506	py, Ag	Co, Ag
		3	1959	West	-45	72	280.5	cp, py	
2	Exploration Projects	2	1959	West	-45	25	144.3		
		4	1959	West	-45	42	247	py, cp	Ag
3	Exploration Projects	5	1959	West	-45	38	383	cp, py	Ag
4	Exploration Projects	6	1959	S50E	-45	10	280	cp, gn	Au, Ag
		7	1959	S50E	-55	8	365	cp, py, hem	
5	Newnorth Gold Mines Ltd.	1	1957	West	-45	25	347		
6	Newnorth Gold Mines Ltd.	2	1957	S45W	-55	60+	60		
		3	1957	S45W	-55	59+	59		
7	Newnorth Gold Mines Ltd.	4	1957	S45W	-45	7	60		
8	Newnorth Gold Mines Ltd.	5	1957	West	-45	7	483		

GDIF FORM NO. 3

DRILLHOLE SUMMARY

Map Drilling Location Number	Company Name	Company Drillhole Number	Date Drilled	Bearing Azimuth DEGREES	Initial Dip of Hole DEGREES	Thickness of Overburden FEET	Total Length of Hole FEET	Mineralization Noted in Log	Assay Data Included for
9	Paymaster Consolidated Mines Ltd.	1	1959	S65E	-40	8	538	py, cp	Ag
		2	1959	S65E	-32	12	245	cp	Ag
		3	1959	S65E	-45	12	67		Ag
10	Silver Pack Mines Ltd.	1	1965	-	-90	6	73	IF, py, cp	Ag
		2	1965	N42E	-55	11	185.2	Co, py, cp	Ag
		3	1965	N18W	-45	12	200	Co, py, cp	Ag
11	Silver Pack Mines Ltd.	4	1965	N22W	-45	9	378.8	spec, py, sp hem, Pb, cp	Ag
		5	1965	S47W	-45	8	167	py, cp, Pb	Ag
12	Sullivan, Martin J. (United Reef Petroleums Ltd.)	URX-71-1	1971	South	-45	4	70	mag, py, cp, arg	Ag, Co
		URX-71-2	1971	South	-45	0	70	cp, gn, Co, py	Ag, Co
		URX-71-3	1971	South	-45	0	70	cp, gn, Ag, py, Co	Ag, Co
		URX-71-4	1971	South	-45	0	70	py, Co, cp	Ag
		URX-71-5	1971	South	-45	4	70	py, cp, gn, Co	Ag, Co
		URX-71-6	1971	165	-45	6	70	cp, py, Co	Ag, Co

GDIF FORM NO. 3

DRILLHOLE SUMMARY

Map Drilling Location Number	Company Name	Company Drillhole Number	Date Drilled	Bearing Azimuth DEGREES	Initial Dip of Hole DEGREES	Thickness of Overburden FEET	Total Length of Hole FEET	Mineralization Noted in Log	Assay Data Included for
13	United Reef Petroleums Ltd.	N-75-1	1975	156	-45	5	319	cp, py, gn, Ag, serp	Ag
		N-75-2	1975	156	-50	4	527.5	py, gn, cp ery, serp	Ag, Co
		N-75-3	1975	150	-50	10	666	py, cp, gn, serp, spec	Ag, Co

GDIF FORM NO. 3

AIRBORNE GEOPHYSICAL SURVEY DATA

No.	By / For	Type of Survey	Flight Altitude	Flight Line Direction	Flight Line Spacing
	No data available as of February 15, 1989				

GDIF FORM NO. 4

GEOCHEMICAL SURVEY DATA

Map Sample Site Reference Number	Type of Survey	Analysis For	By	Reference
1	B horizon soil where possible; A horizon samples in thicker areas	Co, Ag by atomic absorption	By: Technical Services Laboratories For: Alamo Petroleum Ltd.	Leonard Tp. AF Alamo Petroleum Ltd.
2	B horizon soil samples	Co, Ag by atomic absorption	By: Technical Services Laboratories For: United Reef Petroleums Ltd.	Leonard Tp. AF United Reef Petroleums Ltd.

MISCELLANEOUS DATA

AGE DATING

Site	Method	Material	Reference	Result
	No data available as of February 15, 1989			

NEWSPAPER CLIPPINGS FILE

NOTE: A file of newspaper clippings about the companies listed below, who have worked in this area, is maintained in the Regional/Resident Geologist's Office, Cobalt.

Newnorth Gold Mines Ltd.
Silver Pack Mines Ltd.
Walker Silver Mines Ltd.

GDIF FORM NO. 7

ODM GENERAL INDEX SEARCH

Words searched:

Alamo Petroleum Ltd.
Archibald, E.B.
Archibald Silver Mine
Baker Lake
Bennett, W.S.
Bing Lake
Bobtail Lake
Caswell-Eplett Silver Mine
Coulee Lead & Zinc Mines Ltd.
Currie, W.F.
Decker, Albert
Eliza Lake
Eplett-Caswell Silver Mine
Exploration Projects
Exploration Syndicate of Ontario
Fisher Lake

Index Volume	Listing:	Report Volume	Part	Page
	*Out of Print			
	I.O.1 - Report of the Iron Ore Committee			
1	Archibald Silver Mine, Leonard tp.	*19	2	191,194
	Caswell-Eplett silver mine, W. of Fournier lake			
	See Eplett-Caswell silver m.			
	Eplett-Caswell Silver Mine, Leonard tp.			
	Capital and date of charter	*21	1	46
	Operating (1911)	*21	1	50
	Work at, notes	*19	2	191
	Exploration Syndicate of Ontario			
	Capital and date of charter	*18	1	43
	Work by, Shiningtree L. area	*19	2	193
	Fournier Lake, Leonard tp.			
	Iron formation	*19	2	187
	Silver claims	*19	2	190
	Stratified sand	*19	2	189
	Hedlund, L.O.	*19	2	193
	Horseshoe Lake, Shiningtree silver area	*19	2	192
	Leonard Tp., Tim.			
	map, geological, facing	*19	2	238
	silver claims staked	*19	1	52

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:
Fournier Lake
Grand Lake
Grieve, E.L.
Hedlund, L.O.
Herron Lake
Horseshoe Lake
Irene Lake
Langford, Geo.
Leonard Silver Mines Ltd.
Leonard Township
McGill, Kenneth E.
McIntosh Mines Ltd.
McKenzie, Sir William
McKenzie & Mann Ltd.
McVittie, J.P.
Mann, Sir Donald D.

Index Volume	Listing:	Report Volume	Part	Page
1	McIntosh Silver Mine, Leonard tp.			
	Capital and date of charter	*19	1	47
	Discovery	*18	2	1
	Operating	*21	1	50
	Work by	*19	2	192
	McKenzie, Sir William			
	See also McKenzie and Mann			
	President Atikokan Iron Co.	*15	1	59
		*17		209
	Shareholder Willson Carbibe Co.	*10		22
	McKenzie and Mann			
	Boring with Govt. drill	*11		58,60
	Copper prospecting	*12		98
	See also Mann, Sir Donald D.			
	Mann, Sir Donald D.	*14	1	13
		*16	1	73
	Martel, G.E.	*19	1	41
	Neelands Silver Mine, near Fournier lake			
	vein, character	*19	2	191
	Nellie Lake, Leonard tp.			
	silver mining	*19	2	191
	Nellie Lake Syndicate			
	Work by, Nellie lake	*19	2	191,192

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:
Martel, G.E.
Mullen Lake
Neelands, E.W.
Neelands Silver Mine
Nellie Lake
Nellie Lake Syndicate
Newnorth Gold Mines Ltd.
Paymaster Consolidated Mines Ltd.
Pope
Saville Exploration Syndicate
Shining Tree Creek
Shining Tree Lake
Shiningtree Silver Area
Silver Dollar Mines Ltd.
Silver Pack Mines Ltd.
Slim Lake

Index Volume	Listing:	Report Volume	Part	Page
1	Shiningtree Lake, Leonard & Fawcett tps.			
	Distance to Gowganda	*19	2	187
	Glacial striae	* 6		81
		*10		211
	Gold	* 6		174,183
	Gravel Beds	*10		210
	Iron ore on and near	* 6		184
		*15	1	15
		*19	2	187
	jaspilite	*10		178, 182-185
	siderite	*10		198,205
	Rocks on and near	* 6		173
		*10		198
		*19	2	188,194
	map showing, facing	*19	2	238
	See also Shiningtree silver area			
	Silver	*19	1	52
	mining	*19	2	193,194
	rush near	*18	2	2
	Shiningtree Silver Area, Fawcett & Leonard Tps.			
	Notes by Collins	*19	2	194
	Report by Stewart	*19	2	187-193
	Shiningtree Lake Silver Mines Ltd.			
	Capital and date of charter	*19	1	47
	Spider Lake, Leonard tp.			
	Rocks on and near			
	agglomerate, photo	*19	2	188
	porphyritic	*19	2	189
	Silver mining, notes and photo	*19	2	192

ODM GENERAL INDEX SEARCH

Words searched:

Soot Creek Fault
Soot Lake
Spider Creek
Spider Lake
Spike Lake Fault
Spud Lake
Steep-Thompson
Stress Lake
Sullivan, Martin J.
Taylor Lake
Turnbull
United Reef Petroleums Ltd.
Waddington, G.E.
Walker Silver Mines Ltd.
Wapus Creek
Wapus Lake

Index Volume	Listing:	Report Volume	Part	Page
1	Turnbull Silver Claims near Fournier lake			
	Veins, notes	*19	2	190
2	Langford, Geo. B.			
	Field work (1922)	*33	4	1
	Leonard Silver Mines Ltd.			
	Capital and date of charter	35	1	59
	Leonard Tp., Tim.			
	Barite	*27	3	26
	Iron claims	*I.O.[1]		211
	Shiningtree Lake Area, Tim.			
	Iron ore prospecting; analysis	*I.O.		211
	Walker Silver Mines Ltd.			
	Capital and date of charter	35	1	60
3	Archibald Silver Claim, Leonard tp.			
	Location; mineralization	*36	2	95,97
	Baker Lake, Leonard tp.			
	Rocks	*36	2	92
	Caswell-Eplett Silver Claims, Leonard tp.			
	Mineralization: workings	*36	2	95,96

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:
West Wapus Creek

Index Volume	Listing:	Report Volume	Part	Page
3	Currie, W.F.			
	Silver claims, Leonard & Tyrrell tps.	*36	2	95,96 98
	Exploration Syndicate of Ontario			
	Silver claims, Shiningtree l.	*36	2	98
	Hedlund, L.O.			
	Silver claims, Leonard tp.	*36	2	98
	Horseshoe Lake, Leonard tp.			
	Rocks	*36	2	92
	Silver claims on	*36	2	98
	Langford, Geo. B.			
	Reports by:			
	Shiningtree silver area	*36	2	87-99
	Leonard Silver Mines Ltd.			
	Properties, Leonard tp.	*36	2	95,96
	Leonard Tp., Tim.			
	Gold mg. See Paymaster Consolidated Gold Mines			
	Iron ore	*36	2	94,95
	Rocks	*36	2	88-94
	diabase	*47	2	47
	See also map 36c with	*36	2	
	Silver	*36	2	94
		*47	2	47,49
	mg. properties	*36	2	95-98

ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
3	McIntosh Silver Claims, Leonard tp.			
	See Walker s. claims			
	Martel, G.E.			
	Silver claim, Leonard tp.	*36	2	95
	Neelands Silver Claim, Leonard tp.			
	Mineralization	*36	2	95,97
	Nellie Lake, Leonard tp.			
	Silver bearing veins	*36	2	94
	Nellie Lake Syndicate			
	Silver claims, Leonard tp.	*36	2	95,97
	Paymaster Consolidated Mines Ltd.			
	Capital; officers; operations: (1933)	43	1	97
	(1934)	44	1	133
	(1935)	45	1	149
	(1936)	46	1	190
	(1937)	47	1	189
	(1938)	48	1	178
	(1939)	49	1	182
	Dividends	49	1	10
	Incorporated	40	1	43
	Saville Exploration Syndicate			
	Silver claims, Leonard tp.	*36	2	95,96

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ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
3	Shiningtree Lake, Fawcett and Leonard tps.			
	Access	*36	2	88
	Conglomerate, photo	*36	2	90
	Diabase sill	*41	2	47
	Glacial striae	*36	2	93
	Shiningtree Silver Area, Tim.			
	See also Leonard tp.			
	Report on, by Geo. B. Langford	*36	2	87-99
	Soot Lake, Leonard & Tyrrell tps.			
	Rocks, notes and photo	*41	2	37,38
	Spider Lake, Leonard tp.			
	Rocks, notes and diagram	*36	2	89-94
	Silver claims near	*36	2	97
	Spike Lake, Leonard tp.			
	Rocks	*36	2	92
	Silver claims near	*36	2	97
	Spud Lake, Leonard tp.			
	Rocks	*36	2	92,94
	Silver veins	*41	2	47,49
	Steep-Thompson Silver Claim, Leonard tp.			
	Mineralization	*36	2	95,98

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ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
3	Walker Silver Claims, Tyrrell & Leonard tps.			
	notes on	*36	2	95,97
	Wapus Creek, W. br. Montreal r.			
	Photo	*41	2	30
	Rocks	*41	2	35,47
	Silver-cobalt veins	*41	2	47,49
	Wapus Lake, Leonard tp.			
	Iron range	*36	2	89,95
	Rocks	*36	2	92
	Silver claims near	*36	2	95,96
4	Coulee Lead & Zinc Mines Ltd.			
	Change of name	59	1	46
	Leonard Tp., Tim.			
	Gold mg. See Paymaster Consol. Mines			
	Paymaster Consolidated Mines Ltd.			
	Capital; officers; operations: (1940)	50	1	107-110
	(1941)	51	1	172-175
	(1942)	52	1	167-170
	(1943)	53	1	146-149
	(1944)	54	2	77-80
	(1945)	55	2	64,65
	(1946)	56	2	73-75
	(1947)	57	2	75-77
	(1948)	58	2	63-65
	(1949)	59	2	61-63

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Words searched:

Index Volume	Listing:	Report Volume	Part	Page
4 cont.	Paymaster Consolidated Mines Ltd.			
	Dividends (to 1949)	59	1	12,15
	Historical note	58	1	Table III
	Profit tax. See Profit tax, annual report			
	Silver Dollar Mines Ltd.			
	Capital; officers; operations	56	2	110
	Incorporated	56	1	48
8	Archibald-Pope Prospect			
	Leonard Tp., Timiskaming Dist.	MP 53		123
	Fournier Lake			
	Leonard Tp., Timiskaming Dist.	MP 53		122
	Fournier Lake Deposit			
	Leonard Tp., Timiskaming Dist.			
	mining property, report on	GR 106 MRC 11		100-101 469-470
	Hedlund Deposit			
	Leonard Tp., Timiskaming Dist.	MP 53		124
	Leonard & Fawcett Tps., Timiskaming & Sudbury Dist.			
	summary of field work, 1972, by M.W. Carter	MP 53		119-125
	Leonard Silver Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	MP 53		123

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Words searched:

Index Volume	Listing:	Report Volume	Part	Page
8	Leonard Tp., Timiskaming Dist.			
	Geology of Maple Mt. area	GR 106		
	iron	GR 106		100-101
		MRC 11		469-470
	silver/cobalt	MRC 10		415-416
	McKenzie & Mann Ltd.			
	Leonard Tp., Timiskaming Dist.	GR 106		100
	Neelands Prospect			
	Leonard Tp., Timiskaming Dist.	MP 53		123
	Pope-Archibald Prospect			
	See Archibald-Pope Prospect			
	Shining Tree Lake Occurrence			
	Tyrrell Tp., Timiskaming Dist.	MRC 11		478
	Silver Pack Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	MP 53		123
	Steep-Thomson Deposit			
	Leonard Tp., Timiskaming Dist.	MP 53		124
	Walker Silver Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	MP 53		123-124
9	Archibald E.B.			
	Leonard Tp., Timiskaming Dist.	GR 146		39,40

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Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	Archibald Claim Leonard Tp., Timiskaming Dist. report on property	GR 146		39,40
	Bennett, W.S. & McVittie, J.P. Leonard Tp., Timiskaming Dist. report on property	GR 146		32, 38-39
	Bing Lake Leonard Tp., Timiskaming Dist.	GR 146		32,41, 42,45
	Bobtail Lake Leonard Tp., Timiskaming Dist.	GR 146		15,22, 23,28, 32,42
	Caswell-Eplett Prospect Leonard Tp., Timiskaming Dist. report on property	GR 146		40-41
	Coulee Lead & Zinc Mines Ltd. Leonard Tp., Timiskaming Dist.	GR 146		41-42
	Eplett-Caswell Prospect See Caswell-Eplett Prospect			
	Expl. Projects Leonard Tp., Timiskaming Dist. report on property	GR 146		42-43

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Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	Fournier, A.			
	Leonard Tp., Timiskaming Dist.	GR 146		38
	Fournier Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		15, 32-46 passim
	Heron Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		29,41, 42,45, 46
	Irene Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		23
	Leonard & Fawcett Tps., Sudbury & Timiskaming Dist.			
	Geology of the area			
	Report & map 2359 on, 1977, by M.W. Carter	GR 146		
	gold	GR 146		31-32 34-38
	iron	GR 146		32, 38-39
	silver/cobalt	GR 146		32-34, 39-46
	Leonard Silver Mines Ltd.			
	Leonard Tp., Timiskaming Dist.			
	report on property	GR 146		43-44
	McIntosh Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	GR 146		40

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Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	Mackenzie & Mann Ltd. Leonard Tp., Timiskaming Dist.	GR 146		38
	Mullen Lake Leonard Tp., Timiskaming Dist.	GR 146		23-45 passim
	Neelands Prospect Leonard Tp., Timiskaming Dist. report on property	GR 146		44
	Nellie Lake see Taylor Lake			
	Nellie Lake Syn. Leonard Tp., Timiskaming Dist. report on property	GR 146		41
	Newnorth Gold Mines Ltd. Leonard Tp., Timiskaming Dist. report on property	GR 146		44
	Saville Expl. Syn. Leonard Tp., Timiskaming Dist. report on property	GR 146		44-45
	Shining Tree Area, Timiskaming & Sudbury Dist. summary of field work, 1976 by M.W. Carter	MP 67		96-101

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ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	Shining Tree Lake			
	Fawcett Tp. area, Sudbury & Timiskaming Dist.	GR 146		21,25, 30,33, 36,45
		GR 152		152
	Shining Tree-Gogama-Gowganda Areas, Timiskaming & Sudbury Dist.			
	summary of field work (gravity), 1979 by V.K. Gupta & D.R. Wadge	MP 90		167-168
	Silver Dollar Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	GR 146		45
	Silver Pack Mines Ltd.			
	Leonard Tp., Timiskaming Dist.			
	report on property	GR 146		45-46
	Slim Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		23
	Soot Creek Fault			
	Leonard Tp., Timiskaming Dist.	GR 146		29
	Soot Lake			
	Leonard & Tyrrell Tps., Timiskaming Dist.	GR 146		12,13, 14,15
		GR 152		10,15
	Spider Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		7,10, 11,12, 15,32

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ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	Spider Lake Fault			
	Leonard & Tyrrell Tps., Timiskaming Dist.	GR 146		29
	Spud Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		25,40
	Steep-Thompson Prospect			
	Leonard Tp., Timiskaming Dist.	GR 146		41,45
	Sullivan, M.J.			
	Leonard Tp., Timiskaming Dist.			
	report on property	GR 146		46
	Taylor Lake			
	Leonard Tp., Timiskaming Dist.	GR 146		29,41, 42,46
	United Reef Petroleums Ltd.			
	Gowganda area, Timiskaming Dist.	GR 146		46
	Walker Silver Mines Ltd.			
	Leonard Tp., Timiskaming Dist.	GR 146		40
	Wapus Creek			
	Tyrrell Tp. area, Timiskaming Dist.	GR 146 GR 152 GR 175		25 25 8
	Wapus Lake			
	See also Fournier Lake			

ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
9	West Wapus Creek			
	Leonard Tp., Timiskaming Dist.	GR 146		27
	West Wapus Creek Fault			
	Leonard Tp., Timiskaming Dist.	GR 146		29

GDIF FORM NO. 8

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
		*Out of Print		
Andrews, A.J.	1986	Silver vein deposits: summary of recent research	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1459-1462
Andrews, A.J., Owsiacki, L., Kerrich, R. and Strong, D.F.	1986	The Silver Deposits at Cobalt and Gowganda, Ontario. I: Geology, petrography and whole-rock geochemistry.	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1480-1506
Andrews, A.J., Masliwec, A., Morris, W.A., Owsiacki, L. and York, D.	1986	The Silver Deposits at Cobalt and Gowganda Ontario. II: An experiment in age determinations employing radiometric and paleomagnetic measurements.	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1507-1518
Card, K.D. et al	1971	Sudbury-Cobalt Sheet, Geological Compilation Series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury + Timiskaming Dist., Ontario	ODMNA Map 2188	1:253 440
Card, K.D. McIlwaine, W.H.	1973	Geology of the Maple Mountain Area, Timiskaming, Nipissing and Sudbury Districts, Ontario	ODM GR 106	
Card, K.D. McIlwaine, W.H.	1973	Smoothwater Lake, Timiskaming District, Ontario	ODM Map 2256	1:63 360
Card, K.D. Lumbers, S.B.	1977	Sudbury-Cobalt, NTS 31L/W, 31M/SW, 41I, 41P/S, Sudbury + AL 5 Dists., Ontario, Geological Compilation Series	ODM Map 2361	1:253 440

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
Carter, M.W.	1973	Leonard Township, Timiskaming District, Ontario	ODM Map P.820	1:15 840
Carter, M.W.	1975	Geology of Fawcett and Leonard Townships, NTS 41P/6,7,10+11, Sudbury + Timiskaming Dist., Ontario	ODM OFR 5131	
Carter, M.W.	1977	Geology of Fawcett & Leonard Townships, NTS 41P/6,7,10+11, Sudbury & Timiskaming Districts, Ontario	OGS GR 146 OGS Map 2359	 1:31 380
Carter, M.W.	1980	Shining Tree Area, NTS 41P/11, Timiskaming & Sudbury Dist., Ontario	OGS Map P.2313	1:50 000
Carter, M.W.	1981	Shining Tree Area, NTS 41P/11, Timiskaming & Sudbury Dist., Ontario	OGS OFR 5346	
Collins, W.H.	1909	Preliminary Report on the Gowganda Mining Division, District of Nipissing, Ontario	*GSC Separate Report 1075 *GSC Map 1076	 1:63 360
Collins, W.H.	1914	The Geology of the Gowganda Mining Division	*GSC Memoir 33 *GSC Map 64A	 1:63 360
Easton, R.M.	1986	Geochronology of Ontario, Part 1: Compilation of Data	OFR 5592	179 p.
Fortescue, J.A.C.	1985	Preliminary Studies of Lake Sediment Geochemistry in an Area Northeast of Sudbury, NTS 41I/15, 41P/2,7+10, Sudbury + Timiskaming Dist.	OGS Geoph-Geoch Map 80 756	1:100 000
Ginn, R.M.	1964	Timmins-Kirkland Lake Sheet, Cochrane, Sudbury & Temiskaming Dist. Ontario, Geological Compilation Series	ODM Map 2046	1:253 440

GDIF FORM NO.9

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
Goodz, M.D., Watkinson, D.H., Smejkal, V. and Pertold, Z.	1986	Sulphur-isotope geochemistry of silver-sulpharsenide vein mineralization, Cobalt, Ontario	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1551-1567
GSC	1956	Aeromagnetic Map, Gowganda, Ontario	GSC Map 284G	1:63 360
GSC	1957	Aeromagnetic Map, Shining Tree, Ontario	GSC Map 285G	1:63 360
Gupka, V.K.	1981	Bouger Gravity and Generalized Geological Map of Gogama-Gowganda Area, NTS 41P, Timiskaming & Sudbury Dist., Ontario	OGS Map P.2481	1:100 000
Hunter & Assoc. Ltd.	1984	Peat and Peatland Evaluation of the New Liskeard Area, NTS 31M/2 + 41P/E, Tim. + 2 other Dist.	OGS OFR 5486	3 volumes
Jolly, W.T.	1978	Metamorphic History of the Archean Abitibi Belt	GSC Paper 78-10	pp. 63-78
Kerrich, R., Strong, D.F., Andrews, A.J. and Owsiacki, L.	1986	The Silver Deposits at Cobalt and Gowganda, Ontario. III. Hydrothermal regimes and source reservoirs - evidence from H,O,C and SR isotopes and fluid inclusions	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1519-1550
Kretschmar, U. Kretschmar, D.	1980	Talc, Magnesite and Asbestos Deposits in the Kirkland Lake - Timmins Area, NTS 31M, 32D, 41O, 41P, 42A, 42B, Timiskaming + 2 AL Dist.	OGS OFR 5310	

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
Kretschmar, U. Kretschmar, D.	1986	Talc, Magnesite and Asbestos Deposits in the Timmins - Kirkland Lake Area, Timiskaming & Cochrane Dist.	OGS Study 28	
Kutina, Jan and Fabbri, Andrea	1971	Relationship of Structural Lineaments and Mineral Occurrences in the Abitibi area of the Canadian Shield	GSC Paper 71-9	36 p.
Langford, G.B.	1927	Shiningtree Silver Area, Timiskaming District, Ontario	ODM AR, 1927, Vol. 36, pt. 2	pp. 87-99
Langford, G.B.	1927	Part of the Shiningtree Silver Area, Leonard Tp., Timiskaming Dist., Ontario	ODM Map 36c	1:47 520
Legun, A.	1984	Huronian Stratigraphy and Sedimentation in the Cobalt area, NTS 31M/W + 41P, Ontario	OGS OFR 5508	
Long, D.G.F. Leslie, C.A.	1986	The Placer Gold Potential of the Early Aphebian Gowganda Formation along the Northern Margin of the Cobalt Embayment, Ontario with Comments on Associated Concentrations of Silver & Copper	OGS OFR 5608	
Mansinha, L. Wilkinson, D.A.	1983	Grant No. 109: Interpretation of Gravity Data from New Liskeard, NTS 31M/W, 41P/E, Ontario	OGS OFR 5440	
MNR	1982	Ontario Basic Map Sheets	MNR Maps 20 17 4900 52600 20 17 5000 52700 20 17 4900 52600 20 17 5000 52700	1:20 000
MNR		Leonard Township Claim Map	MNR Map Plan No. M.232	1" = 40 ch.

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SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
OGS	1979	Airborne Gamma-Ray Spectrometry Maps and Profiles	OGS Geoph-Geoch Maps 80372-80410	1:250 000
Park, W.A.	1907	The Geology of a District from Lake Timiskaming Northward	*GSC Summary Report 1904 Vol. XVI, pt. A	pp. 198-225
Pyke, D.R. Ayres, L.D. Innes, D.G.	1973	Timmins-Kirkland Lake Geological Compilation Series, Cochrane, Sudbury & Timiskaming Dist., Ontario	ODM Map 2205	1:253 440
Redman, J.D. Strangway, D.W.	1986	Ontario Geoscience Research Grant Program, Grant No. 118, Surface Electromagnetic Mapping in Northern Ontario	OGS OFR 5615	
Reid, J.A.	1943	Mineral Resources of the Timiskaming Silver-Cobalt Area, Ontario	ODM Bulletin No. 134	
Roed, M.A.	1980	Elk Lake Area, NTS 41P/NE, Timiskaming District, Ontario	NOEGTS 83	
Roed, M.A. Hallett, D.R.	1980	NOEGTS Data Base Map, Elk Lake, NTS 41P/NE, Timiskaming District, Ontario	OGS Map 5020	1:100 000
Savage, W.S. Fenwick, K.G.	1962	Gogama Sheet, Districts of Sudbury and Timiskaming, Ontario	ODM Map P.151	1:126 720
Savage, W.S. Thomson, R. Fenwick, K.G.	1962	Elk Lake-New Liskeard Sheet, District of Timiskaming, Ontario	ODM Map P.159	1:126 720
Springer, J.	1977	Ontario Mineral Potential, Gogama Sheet + part of Ville Marie Sheet, NTS 41P, 31M/W, Timiskaming & Sudbury Districts, Ontario	OGS Map P.1514	1:250 000

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
Stewart, R.B.	1913	The Outlying Cobalt-Silver Areas, Shining Tree Silver Area, Ontario	OBM AR, 1910, Vol. 19, pt. 2	Ch. 2, pp. 187-193
Stewart, R.B.	1910	Geological Sketch Map of the Township of Leonard, Ontario	OBM Map 19i	1:126 720
Surveys & Mapping Branch, EMR	1976	Opikinimika Lake, Ontario	NTS 41P/6	1:50 000
Surveys & Mapping Branch, EMR	1976	Smoothwater Lake, Ontario	NTS 41P/7	1:50 000
Surveys & Mapping Branch, EMR	1976	Gowganda, Ontario	NTS 41P/10	1:50 000
Surveys & Mapping Branch, EMR	1976	Shining Tree, Ontario	NTS 41P/11	1:50 000
Symons, D.T.A. Stupavsky, M.	1983	Grant No. 143: Analysis of Aeromagnetic Anomalies over Algoman-Type Iron Formations	OGS OFR 5476	
Thorpe, R.I., Goodz, M.D., Jonasson, I.R. and Blenkinsop, J.	1986	Lead-isotope study of mineralization in the Cobalt District, Ontario	Canadian Journal of Earth Sciences, Vol. 23, No. 10	pp. 1568-1575
Vos, M.A., Abolins, T., McKnight, R.L.W. and Smith, V.	1987	Industrial Minerals of Northern Ontario	OGS MDC 26	

GDIF FORM NO.9

NOTES AND ADDENDA

The exploration data map shows only the most important minerals found at each site. All the minerals noted are listed in the mineral occurrences or the drill hole data.

On the maps, only the areas for which work has been submitted to the Ministry are shown and thus a company may hold, or have held in the past, more ground than is shown.

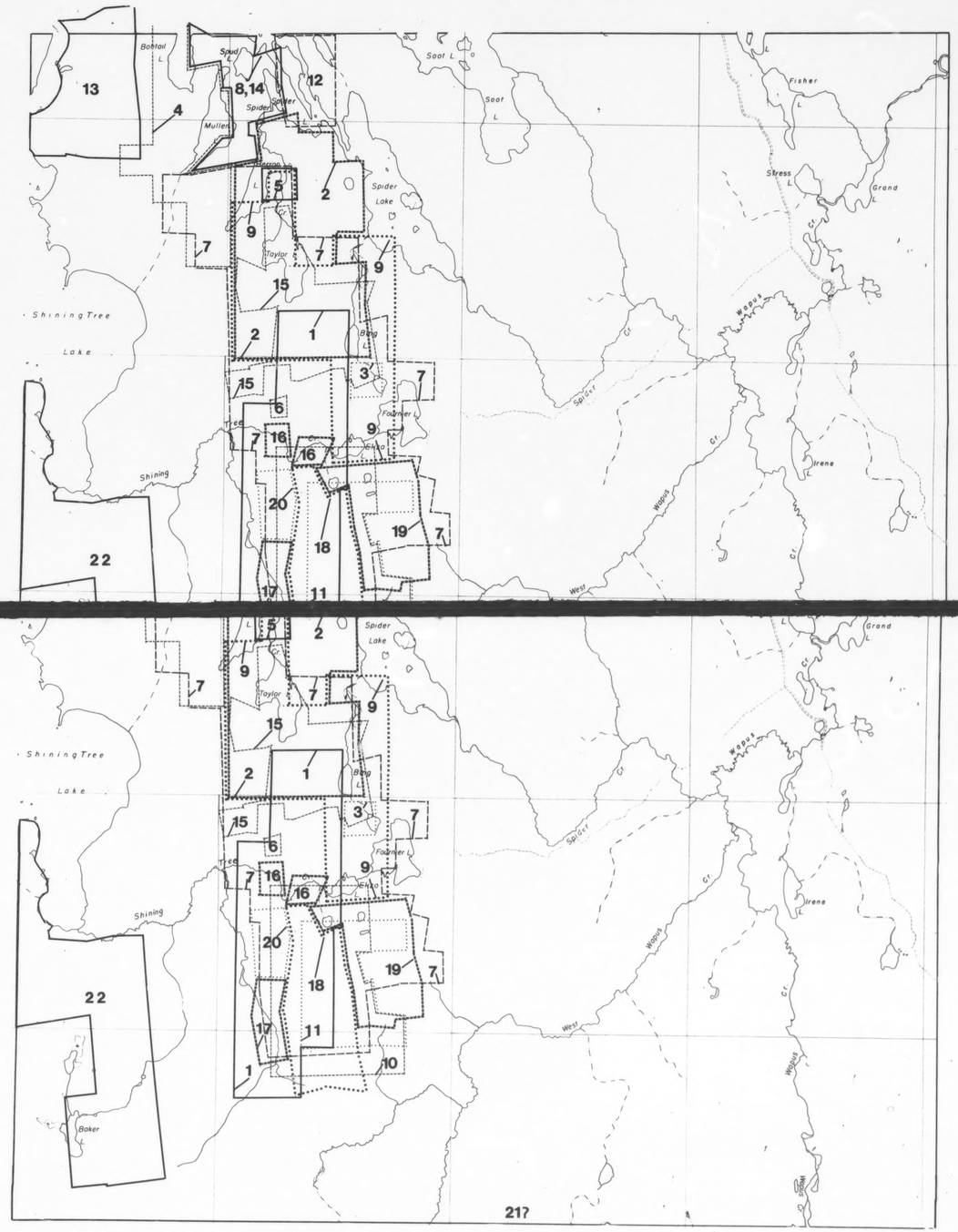
No present or past producers.

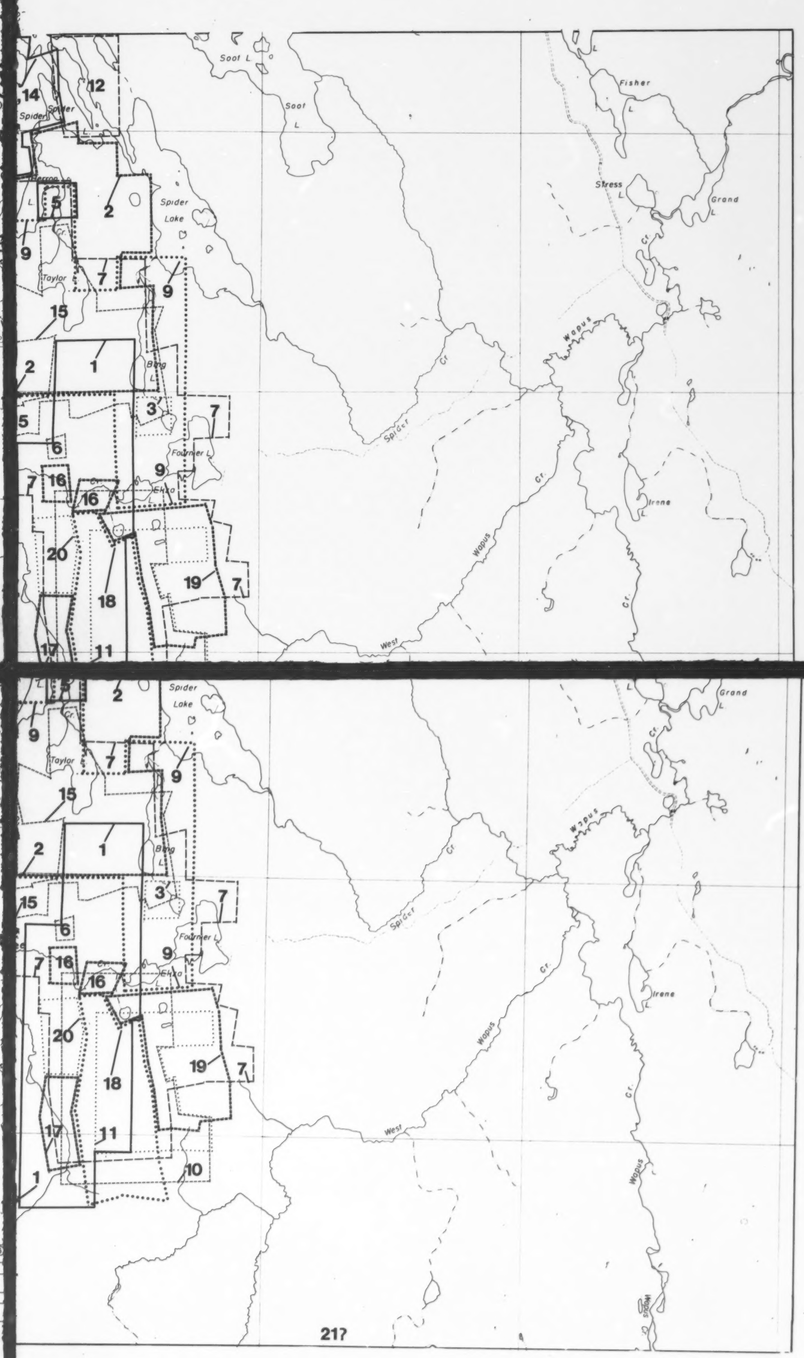
The township was closed to staking in 1978 due to the Bear Island Indian Caution.

AIR PHOTOS - on file in Cobalt

1" = ¼ mile for 1959 and 1970.

Air photos can also be viewed at or purchased from the Public Service Centre, Room 1640, Whitney Block.





Ontario Ministry of Northern Development and Mines

Mines and Minerals Division

ONTARIO GEOLOGICAL SURVEY

PROPERTY LOCATION MAP

GEOLOGICAL DATA INVENTORY FOLIO 505

(Map 1 of 2)

LEONARD TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

EXPLORATION DATA FILE AREAS

- Reference number is always inside work area outlined. See listing in text pages.
- Small area of exploration
- File covers whole township or area

TYPES OF DATA SHOWN ON THIS MAP

GEOCHEMICAL AND GEOCHRONOLOGICAL DATA

- Geochemical sample site, with reference number
- Area of geochemical sampling, with reference number
- Age dating material sampling site, with reference number

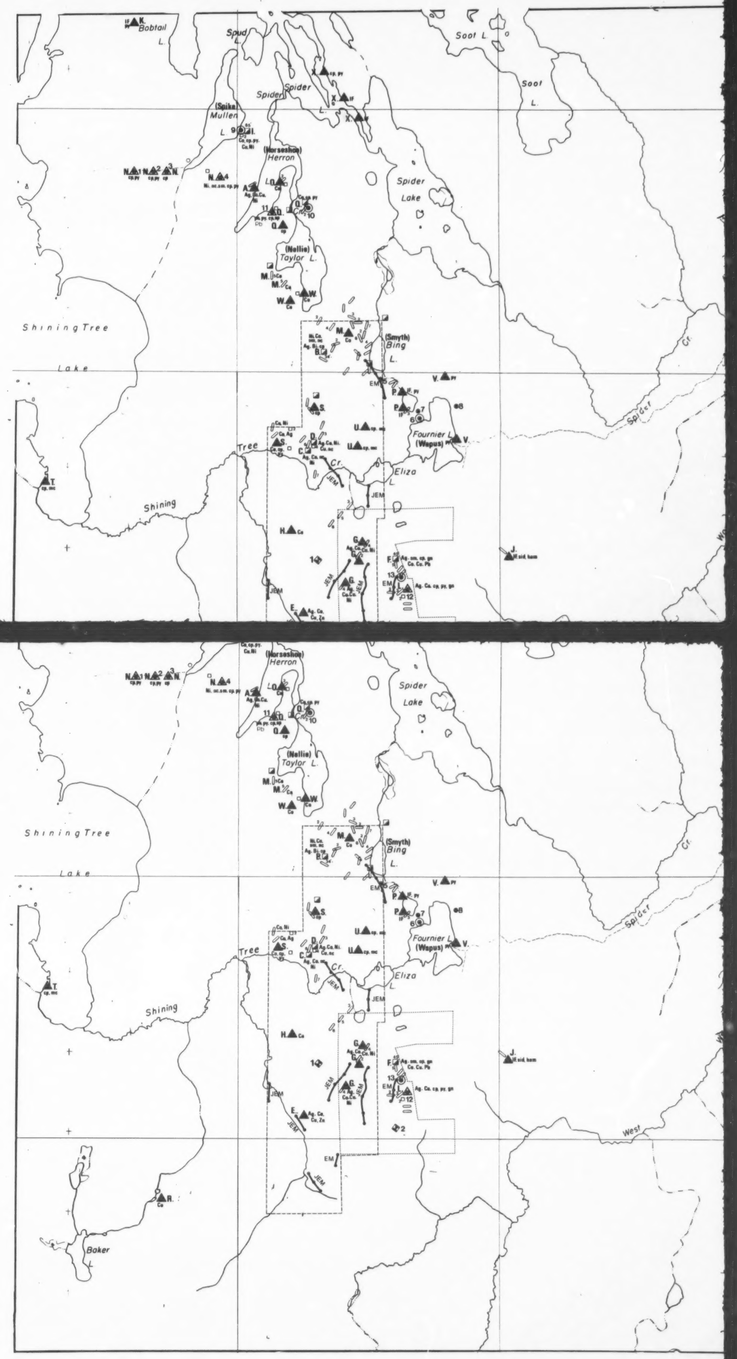
GEOPHYSICAL ANOMALIES

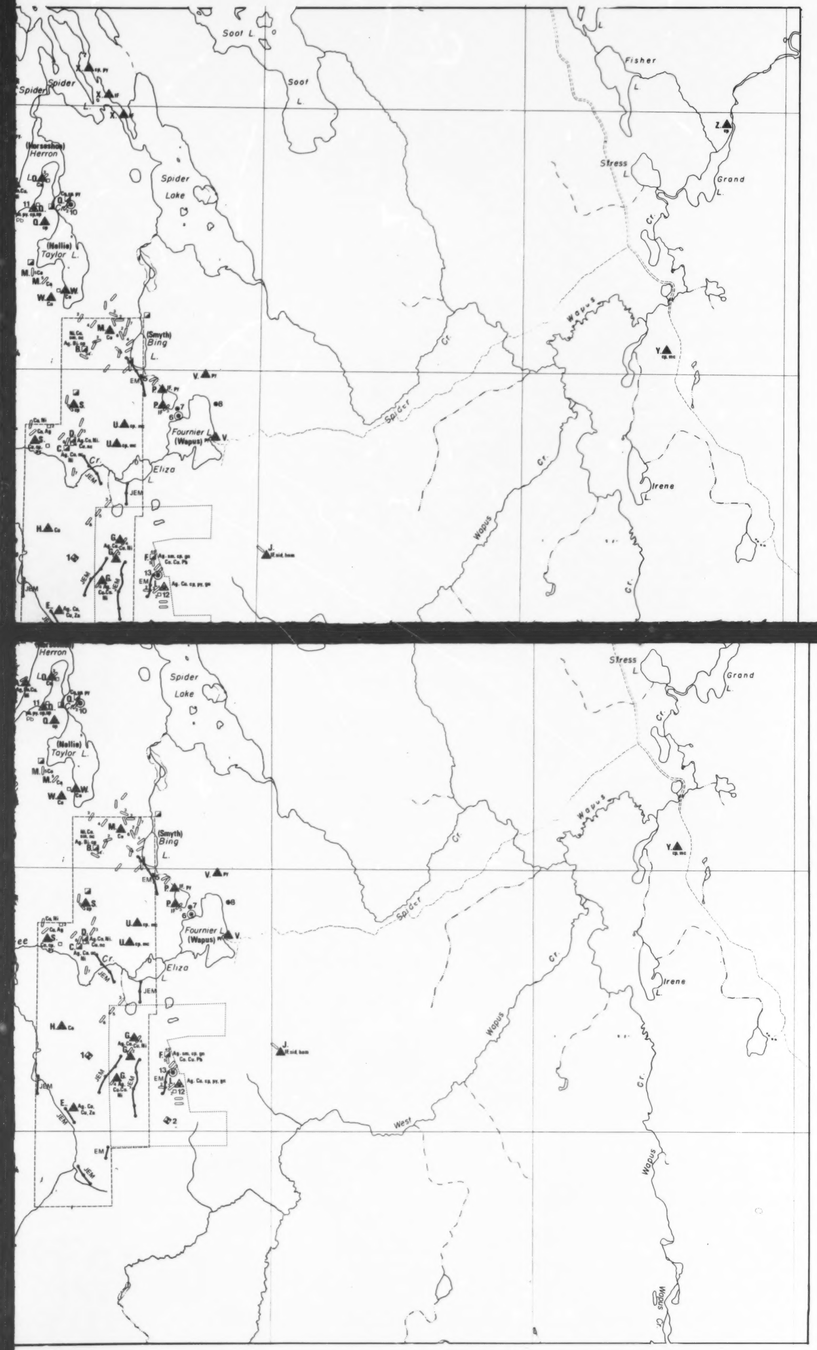
- AM — Airborne magnetic anomaly
- Airborne electromagnetic anomaly Length of anomaly along flight line
- Airborne electromagnetic anomaly
- Airborne electromagnetic anomaly Conductor axis
- ARA — Airborne radiometric anomaly
- M — Ground magnetic anomaly
- VL — Ground electromagnetic anomaly (VL - Vertical loop; HL - Horizontal loop VLF - Very low freq.; Turam; JEM - Crone Em - 16; EM - Undefined)
- RA — Ground radiometric anomaly
- IP — Induced polarization anomaly
- SP — Self potential anomaly
- AFMAG — Audio-frequency magnetic anomaly (total intensity)
- R — Resistivity anomaly
- GR — Gravity anomaly

MISCELLANEOUS DATA

- Trenching, pit
- Adit
- Open pit
- Rock quarry
- Sand and/or gravel pit
- Number of closely spaced trenches or pits

NOTE: Consult the text that accompanies this map for pertinent lists of data, references, and abbreviations.





Ministry of Northern Development and Mines — Mines and Minerals Division
Ontario

ONTARIO GEOLOGICAL SURVEY

EXPLORATION DATA MAP

GEOLOGICAL DATA INVENTORY FOLIO 505

(Map 2 of 2)

LEONARD TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

GEOLOGICAL AND MINING SYMBOLS

TYPES OF DATA SHOWN ON THIS MAP

MINERAL OCCURRENCES

- Mineral occurrence at surface, with reference letter
- Mineral occurrence with shaft, depth given with reference letter
- Mineral occurrence reported but exact location uncertain, with reference letter
- Mineralized float with reference letter
- Mineral occurrence in drillhole, with reference letter, and drillhole number

DRILLHOLES

- Location of single drillhole, with reference number
- Location of closely spaced group of drillholes, with reference number
- Drillhole, exact location uncertain, with reference number
- Property with underground drillholes in this general area, with reference number
- Property with drillholes which have not been plotted on map, with reference number
- Reverse circulation drillhole; churn drilling, with reference number